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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,668

10/05/2005

Yoichi Ikematsu

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EXAMINER

ZIMMERMAN, JOHN J

ART UNIT

PAPER NUMBER

1794

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/552,668	<b>Applicant(s)</b> IKEMATSU ET AL.	
	<b>Examiner</b> John J. Zimmerman	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4 and 5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2 and 4-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20080207, 20051005</u> .                                      | 6) <input type="checkbox"/> Other: ____.                          |

## **FIRST OFFICE ACTION**

### ***Amendments***

1. This First Office Action considers the claims and specification as amended in the "AMENDMENT (Under PCT Article 34)" received October 5, 2005. Claims 1-2 and 4-5 are pending in this application.

### ***Priority***

2. A copy of the certified copy of the foreign priority document has been received and placed in the application file.

### ***Claim Rejections - 35 USC § 102/103***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2 and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda (JP 2001-323355).

6. Honda discloses a high strength galvanized steel sheet having excellent corrosion resistance and platability wherein example compositions of the steel include 0.072 wt.% C, 0.4 wt.% Si, 0.82 wt.% Mn, 0.01 wt.% P, 0.006 wt.% S, 0.071 wt.% Al, 0.062 wt.% Ti (e.g. example B in Table 1) or 0.084 wt.% C, 0.1.83 wt.% Si, 2.35 wt.% Mn, 0.004 wt.% P, 0.005 wt.% S, 0.063 wt.% Al, 0.018 wt.% Ti, 0.017 wt.% Nb (e.g. example E in Table 1). The zinc plating composition can include 0.2-10 wt.% aluminum (e.g. see paragraph [0023]). These steel compositions fall within the steel composition ranges required by applicant's claim 1. Honda's steel plates are subject to annealing where moisture pressure and hydrogen content pressure ( $\text{PH}_2\text{O}/\text{PH}_2$ ) are operated by introducing steam into the furnace (e.g. [0036]-[0037], [0046]). Honda reveals that by controlling the atmosphere during treatment,  $\text{SiO}_2$  is changed to an internal oxidation state within 3 microns or less from the steel surface (e.g. see paragraphs [0007]-[0009], [0038]). Although Honda may not require the Si oxide to have an average diameter particle size of 0.001-1  $\mu\text{m}$ , in view of similarities in Honda's process to applicant's process, one of ordinary skill in the art would expect the end products to have the same or substantially the same microstructures. Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where

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rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977). Although Honda may differ from claim 4 in that Honda may not require the same annealing temperature range, one of ordinary skill in the art at the time the invention was made clearly understands the effect of the annealing temperature on the treatment of the steel substrate and would also clearly understand that the temperature range would need to be optimized for platability during galvanizing as intended by Honda. Determining the annealing temperature range that would best deliver Honda's goal of a  $\text{SiO}_2$  internal oxidation state within 3 microns or less from the steel surface would be a mere matter of routine experimentation by one of ordinary skill in the art. In addition, although Honda may differ from claim 4 in that Honda may not recite the  $\text{PH}_2\text{O}/\text{PH}_2$  ratio range in the same manner, Honda clearly shows recognition that the  $\text{PH}_2\text{O}/\text{PH}_2$  ratio is a result effective variable for plating adhesion in high strength galvanized steel sheet and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the ratio for this specific purpose. As it is clear that the result of Honda's  $\text{PH}_2\text{O}/\text{PH}_2$  ratio is the formation of  $\text{SiO}_2$  as internal oxidation within 3 microns or less from the steel surface (e.g. see paragraphs [0007]-[0009], [0038]), it would be expected that Honda's ratio falls within, overlaps and/or is patentably indistinct from the parameters of applicant's claimed range. Although Honda may not express his optimization in the same formula type format as is found in applicant's claim 4, merely describing Honda's optimization in a different type of format is not a patentable distinction over the invention of Honda.

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7. Claims 1-2 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kyono (U.S. Patent 6,398,884).

8. Kyono discloses galvanized steel sheet having wherein the example compositions fall within the claimed ranges for C, Si, Mn, etc. . . (e.g. examples G-J in Table 1). The zinc plating composition can include 0.14 wt.% aluminum (e.g. see Example 1 in column 17). Kyono's steel plates are subject to annealing where internal oxide layer occurs in the surface of the steel sheet (e.g. see column 3, lines 24-30). The internal oxides include silicon and manganese oxides (e.g. column 6, lines 17-24). Although Kyono may not describe that the oxides have an average diameter particle size of 0.001-1  $\mu\text{m}$  as in pending claim 1, in view of the similar use of an internal oxidation process, barring evidence to the contrary one of ordinary skill in the art would expect the end products to have substantially similar microstructures at substantially similar depths from the interface. Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

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9. Claims 1-2 and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (JP 2000-290730).

10. Suzuki discloses a high strength galvanized steel sheet having an excellent balance of strength and ductility wherein example compositions of the steel fall within the claimed ranges for C, Si, Mn etc. . .(e.g. examples 1-13 in Table 1). The zinc plating composition can include 0.08-0.2 wt.% aluminum (e.g. see paragraph [0049]). Suzuki's steel plates are subject to annealing where the atmosphere is optimized by varying the  $H_2O/H_2$  ratio in a temperature range of 800-1000 °C and results in internal oxidation of a silicon content in the steel (e.g. [0006]-[0019], [0037]-[0040], Table 1). Suzuki reveals that by controlling the atmosphere during treatment, an internal oxidation involving Fe, Si and Mn within several microns from the steel surface occurs (e.g. see paragraph [0017]). Although Suzuki may not require the Si oxide to have an average diameter particle size of 0.001-1  $\mu m$ , in view of similarities in Suzuki's process to applicant's process, one of ordinary skill in the art would expect the end products to have the same or substantially the same microstructures. Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977). Although Suzuki may

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differ from claim 4 in that Suzuki may not require the same annealing temperature range endpoints, the temperature ranges overlap and therefore the process would be expected to be patentably indistinct in the overlapped portions. In addition, although Suzuki may differ from claim 4 in that Suzuki may not recite the  $H_2O/H_2$  ratio range in the same manner, Suzuki clearly shows recognition that the  $H_2O/H_2$  ratio is a result effective variable for plating adhesion in high strength galvanized steel sheet and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the ratio for this specific purpose. As it is clear that the result of Suzuki's  $H_2O/H_2$  ratio is the formation of silicon oxides as internal oxidation within several microns from the steel surface (e.g. see paragraph [0017]), it would be expected that Suzuki's ratio falls within, overlaps and/or is patentably indistinct from the parameters of applicant's claimed range. Although Suzuki may not express his optimization in the same formula type format as is found in applicant's claim 4, merely describing Suzuki's optimization in a different type of format is not a patentable distinction over the invention of Suzuki.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional prior art made of record serves to further establish the level of ordinary skill in the art.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Zimmerman whose telephone number is (571) 272-1547.



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The examiner can normally be reached on 8:30am-5:00pm, M-F. Supervisor Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John J. Zimmerman  
Primary Examiner  
Art Unit 1794

/John J. Zimmerman/  
Primary Examiner, Art Unit 1794

jjz  
August 25, 2008